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In informer referere for writers who ended at Survey officer for comment, February 2, 1938.

Ground-hog-day questions are an old story to the U. S. Biological Survey. Uncle Sam's guardian of the nation's birds and mammals.

This year's story, it seems, is a sequel to another story written a few years ago in response to requests from newspapers for a finel word on the famous shadow caster. It seems that there is no final word.

The Biological Survey has experts on marmots (ground hogs or wood-chucks to you), and of course the experts scaff at superstitions. They rely on records. When that story was asked for a few years ago, one of these experts looked up the records and then allowed himself to be quoted as saying: "Whoever picked February 2 for ground-hog day must have gotten his dates mixed; on that day every sensible ground hog is sleeping soundly in his underground burrow." The earliest date on record was February 7, and that was made down in North Carolina where winters are not so long.

What happened then? Simply this: The experts began hearing from the ground-hog-day boosters. Protests. And besides there were a half dozen more records added to the files (for which the Biological Survey was thankful), and all of these were on or before February 2. The largest number, in fact, was for February 2, but then that was only 2—one of a woodchuck trail in the snow in the Rouge River valley east of Toronto, Canada, and the other of a ground-hog killed by a dog on February 2 near Ascutney, in Windsor County, Vermont. The other new dates were January 1, a woodchuck in a trap near Sandy Lake, Mercer County, Pa.; January 4, one shot near Orton, Dufferin County, Ontario; January 8, one caught by a dog near Stroudsburg, Monroe County, Pa.; and February 1, one trapped in Allegan County, Mich.

Well, a record is a record if you're a mammalogist, and the Survey's marmot experts were glad to put a few more cards in their crowded file drawers. And they had to admit that there may be some ground-hog shadows around on ground hog days, but they still continued to maintain that the scientific basis for looking for woodchucks on February 2 is pretty picayune. In fact, even today they don't think it's worth mentioning. Here's what they say:

The popular notion of the ground hog as an indicator of weather conditions is a superstition that today has only a whimsical foundation, Its origin is unknown, though there are various explanations. It may have been imported from Europe, where there is a similar long-standing superstition about the significance of the hedge hog's appearance on Candlemas Day (February 2); early settlers may have transferred this belief to the ground hog—a distinctly different animal. Because the name is ground-hog day, the superstition must have originated in southern States. There the animal is called a ground hog; in the northern States it is called a woodchuck. Another naturalist has traced the beginning of the belief to the negroes of the "eastern middle States." As a matter of fact, however, there are no grounds at all on which to base the ground hog's reputation as a weather prophet; the notion lives today merely because it is picturesque.

So the tradition that the ground hog rouses from its winter's sleep on February 2, that it comes out of its burrow and ends its hibernation if it sees no shadow, and that its actions have meteorological significance has no value in itself. It should be classed with prophecies like these: "As the first of January is, so will be all the rest of the month," and "The second of January determines the weather of February and also that of September." As the Weather Bureau of the United States Department of Agriculture has pointed out, the best way to tell what the weather is going to be on any number of days is to go on each of these days to the little box in the upper corner of one's daily newspaper.

Ground-hog day, though, may be a good time to take note of the interesting habits of these animals. Scoffer at the superstition and opponent of its continuance as he is, Arthur H. Howell, Survey mammalogist, once chose February 2 (1914) to describe ten new subspecies that he had "murely as a jobs," he hadened to application, at least, these marmots—studied and named. In the scientific publication, at least, these marmots—came out on ground-hog day. In the following year the Department of Agriculture issued an 80-page publication written by Mr. Howell and entitled "Revision of the American Marmots," describing all the American species and subspecies of the animal—ten of which carry Mr. Howell's name as the original describer.

The American marmots, says Mr. Howell in this publication (North American Fauna No. 37), naturally divide into three distinct groups: The woodchucks of eastern United States and Canada; the yellow-footed marmots of Western United States and southern British Columbis; and the hoary marmots, chiefly restricted to the higher mountains of western North America. Animals of the first group are the ones credited with the ability to fore-judge the weather. "Woodchuck"—a modification of the Indian "wejack"—is not the only name for them. As mentioned before, in the southern States they are called ground hogs. In eastern Canada, among the French Canadians, the name is "siffleur" is current. In central Canada "wenusk," the Cree Indian name, is generally used. In southern Virginia the name is "moonack." This species of marmot, the woodchuck, with its various names, ranges in the United States over most of the East, including some states west of the

Woodchucks live for the most part in pairs or family groups, in burrows which they dig for themselves, preferably undermeath or among rocks. As a rule they stay close to the earth, but occasionally they climb into trees and brushes. They live chiefly on clover, alfalfa, and grass, though they sometimes gnaw and scratch the bark of young fruit trees. The tonguetwister, "How much wood would a woodchuck chuck if a woodchuck would chuck wood?" is true in its implication; the animal has very little to do with wood, although it formerly was an inhabitant chiefly of forests.

Thickset and clumsy, with short, stout legs, and a rether short, flattened and densely haired tail, the woodchuck is equipped for underground work, but not for speed. Its safely lies in staying near a hole in the ground. The animal may often be seen standing erect on its heanches—alert, observant, and ready to dive into its hole. One who sees the animal in this characteristic pose will note the short, broad head; the short, broad, rounded and well—haired ears; and heavy coat of hair, the woodchuck has hairs of two kinds—a dense, soft, somewhat woolly underfur confined chiefly to the back and sides, and longer, coarser hairs covering the whole body. The underfur is usually gray or dark brown, tipped with lighter color, and the longer hairs are usually brown, hazel, or balck, tipped with buff or white.

The animal seldom vocalizes, but when alarmed it utters a loud shrill whistle—the habit that has given it the name "siffleur" in eastern Canada.

The woodchuck's most interesting habit, of course, is its hibernation. The animal does not store food for winter and could find little forage available. So it fattens itself during the summer and early fall, especially on the new grass that grows when the rains come after haying time, leaves the meadows and open fields for the woods, finds a burrow, curls up, and goes to sleep. During hibernation the animal appears to be dead, and an observer would have to use instruments even to determine that it is breathing. This quiet life begins in September, or sometimes in October, and ends in February or March.

For weeks before hibernation the woodchuck becomes more and more sluggish. Whereas it usually ventures forth several times during the day and occasionally in the moonlight, late in the fall it comes out only in the heat of the day and rather drowsily suns itself. On emerging from hibernation early in the spring, however, the woodchucks are alert and full of energy—quite different from the sluggish, sleepy creatures of the late autumn. If there is snow on the surface, the animal tunnels to the green grass to satisfy hunger. It is at this season, however, that it uses up the stored fat, not much of which, strange as it may seem, is consumed during the dormant period.

When the woodchuck starts a new year it also often starts anew a serious problem for the farmer. Its habit of digging burrows in meadows and of consuming grasses and crops makes it a nuisance sometimes and gives occasion for a kind of ground-hog-day different from the one honoring the marmot as a prophet. Several years ago the woodchucks in one county of Iowa, for instance, had steadily increased until the many holes and burrows had become a menace to livestock in meadows, and pastures. Farmers and he county agent gave the matter serious consideration, and the week beginning May 15 was set aside for a united effort to reduce the number of woodchucks in the county. With the methods developed by the Biological Survey (which are explained in the Department of Agriculture Leaflet 21*L "Woodchuck Control in the Eastern States," by James Silver), the farmers succeeded in killing about 2,000 ground hogs during the week of the drive. In that county May 15 was ground-hog day that year; on February 2 there would have been no woodchucks awake.

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